

**REMARKS**

The Abstract of the Disclosure is amended in accordance with the Examiner's request to reduce the number of words.

Claims 1 and 4-21 are presented for examination.

It is respectfully submitted that the finality of the Office Action is premature. As the Examiner admits, the previous Office Action did not address claim 20 because of the Examiner's error. Claim 20 was not amended in the previous Office Action. Accordingly, the final rejection with respect to claim 20 raised in the present Office Action is improper. The withdrawal of the finality is respectfully requested.

**Claim 1 has been rejected under 35 U.S.C. 103 as being unpatentable over Chong et al. in view of Ramakrishnan. Claims 4-11 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Chong et al. in view of Ramakrishnan and Fox.**

This rejection is respectfully traversed for the following reasons:

Claim 1 recites a computer system that comprises:

- a local bus,
- a host processor coupled to the local bus,
- a network interface for providing an interface between the local bus and a network medium, and
- a memory coupled to the local bus, the memory having receive buffers allocated for receiving data from the network medium.

The network interface includes an automatic flow control mechanism for automatically controlling a flow of data from the network medium based on availability of the receive buffers.

In a first flow control mode initiated when a flow control mode signal is at a first logic level, the automatic flow control mechanism is configured to respond to a shortage of the receive buffers by automatically requesting a remote transmitter coupled to the network medium to suspend data transmission until a predetermined number of the receive buffers is available.

In a second flow control mode initiated when the flow control mode signal is at a second logic level, the automatic flow control mechanism is configured to respond to a shortage of the receive buffers by automatically requesting the remote transmitter coupled to the network medium to suspend data transmission for a predetermined time.

The Examiner admits that Chong does not disclose the claimed second flow control mode initiated when the flow control mode signal is at a second logic level.

Ramakrishnan is relied upon for disclosing a flow control mechanism configured to respond to a shortage of the receive buffers by automatically requesting the remote transmitter coupled to the network medium to suspend data transmission for a predetermined time.

However, neither Chong nor Ramakrishnan teaches or suggests the claimed flow control mode signal having a first logic level, at which the automatic flow control mechanism is configured to respond to a shortage of the receive buffers by automatically requesting a remote transmitter coupled to the network medium to suspend data transmission until a predetermined number of the receive buffers is available, and having

a second logic level, at which the automatic flow control mechanism is configured to respond to a shortage of the receive buffers by automatically requesting the remote transmitter coupled to the network medium to suspend data transmission for a predetermined time.

Accordingly, a combination of the references is not sufficient to suggest controlling the flow control mode in the manner required in claim 1.

It is well settled that the test for obviousness is what the combined teachings of the references would have suggested to those having ordinary skill in the art. *Cable Electric Products, Inc. v. Genmark, Inc.*, 770 F.2d 1015, 226 USPQ 881 (Fed. Cir. 1985). In determining whether a case of prima facie obviousness exists, it is necessary to ascertain whether the prior art teachings appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification. *In re Lalu*, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1984).

As demonstrated above, the combined teachings of the references are not sufficient to one skilled in the art to suggest **controlling a mode of operation** of a flow control mechanism in the manner required in claim 1.

Moreover, the Examiner should recognize that the fact that the prior art *could* be modified so as to result in the combination defined by the claims would not have made the modification obvious unless the prior art suggests the desirability of the modification. *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986). In the absence of such a prior art suggestion for modification of the references, the basis of the rejection is no more than inappropriate hindsight reconstruction using applicant's claims as a guide. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967).

Applicant respectfully submits that the Examiner has improperly applied hindsight as a basis for a holding of obviousness. In particular, the modification of the references suggested by the Examiner is not based on a prior art suggestion. Instead, the Examiner's considerations are based on the present invention. It is noted that only the present invention suggests a procedure for controlling a mode of operation of a flow control mechanism so as to respond to a shortage of the receive buffers by automatically requesting a remote transmitter coupled to the network medium to suspend data transmission until a predetermined number of the receive buffers is available in a first mode of operation, and to respond to a shortage of the receive buffers by automatically requesting the remote transmitter coupled to the network medium to suspend data transmission for a predetermined time in a second mode of operation.

Claims 4-11 depend from claim 1 and are defined over the prior art at least for the reasons presented above in connection with claim 1.

Accordingly, the rejections of claims 1 and 4-11 under 35 U.S.C. 103 are improper and should be withdrawn.

**Claims 12-17, 19 and 20 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Chong et al. in view of Fox. Claims 18 and 21 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Chong et al. in view of Ramakrishnan and Fox.**

Independent claim 12 recites a network interface device for providing an interface between a data network and a computer system, the network interface device comprising:

-a descriptor management unit for managing receive descriptors pointing to receive buffers allocated to receive data from the network medium, and

-an automatic flow control mechanism for automatically performing flow control in accordance with the number of available receive descriptors pointing to the receive buffers available for receiving data from the network medium.

The Examiner admits that Chong does not disclose:

-a descriptor management unit for managing receive descriptors pointing to receive buffers allocated to receive data from the network medium, and

-an automatic flow control mechanism for automatically performing flow control in accordance with the number of available receive descriptors pointing to the receive buffers available for receiving data from the network medium.

Fox is relied upon for disclosing the claimed elements.

As discussed in the previous Office Action, Fox does not describe automatically performing flow control in accordance with the number of available receive descriptors pointing to the receive buffers available for receiving data from the network medium. Instead, this reference discloses that when hardware receive descriptors are filled, incoming data cannot be received. In this case, a buffer descriptor overflow error occurs, an error counter is incremented and the error is reported to a fault management system (col. 7, lines 5-15).

The Examiner appears to admit this fact in his response to the Applicant's argument. The Examiner indicates that Fox is relied upon for teaching "the use of descriptors in the determination of buffer unavailable status."

Considering Chong, the reference does not disclose automatically performing flow control in accordance with the number of available receive descriptors pointing to the receive buffers available for receiving data from the network medium.

Accordingly, a combination of Chong with Fox is not sufficient to suggest these claimed features.

Independent claim 19 recites a method of automatic flow control in a network interface between a data network and a computer system. The method comprises the steps of:

- monitoring the number of receive descriptors pointing to buffers in the computer system available for receiving data from the network, and

- automatically requesting a remote station in the data network to suspend data transmission when the number of receive descriptors falls below a first preprogrammed threshold level.

As discussed above, neither Chong nor Fox teaches or suggests automatically requesting a remote station in the data network to suspend data transmission when the number of receive descriptors falls below a first preprogrammed threshold level.

Hence, a combination of these references is not sufficient to suggest the invention recited in claim 19.

Moreover, it is respectfully submitted that the Examiner's suggestion to combine Chong and Fox is based not on a prior art suggestion for modification of the references, but rather on inappropriate hindsight reconstruction using applicant's claims as a guide.

Dependent claims 13-18 and 20-21 are defined over the prior art at least for the reasons presented above in connection with respective independent claims 12 and 19.

Accordingly, the rejections of claims 12-21 under 35 U.S.C. 103 are improper and should be withdrawn.

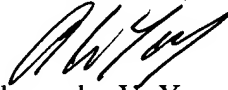
Entry of the amendment to the specification under 37 CFR § 1.116 is respectfully requested because the amendment complies with requirements of form expressly set forth in a previous Office Action.

In view of the foregoing, and in summary, claims 1, and 4-21 are considered to be in condition for allowance. Favorable reconsideration of this application, as amended, is respectfully requested.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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